ABSTRACT OF THE DISCLOSURE

Improved polymer-immobilized photosensitizer are disclosed as well as methods of preparing and using them. The polymer-immobilized photosensitizers comprise a cross-linked polymer backbone, a plurality of cationic ammonium or phosphonium groups covalently bound to the polymer backbone and an immobilized photosensitizer. The average total number of carbon atoms in the ammonium or phosphonium group is at least four and preferably at least 12. The photosensitizer can be either covalently or ionically bound to the polymer. Polymer-supported photosensitizers of the invention are unexpectedly superior in catalyzing the photosensitized oxidation of compounds containing carbon-carbon double bonds.